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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,144	11/25/2003	Robert J. Hariri	9516-495-999	6313

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EXAMINER	
HIBBERT, CATHERINE S	

ART UNIT	PAPER NUMBER
1636	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/721,144	HARIRI, ROBERT J.	
	Examiner	Art Unit	
	CATHERINE S. HIBBERT	1636	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 July 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,5,6,8,12,13,15-18,20-23,31,32,34-37,50 and 54-57* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,5,6,8,12,13,15-18,20-23,31,32,34-37,50 and 54-57* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Please note that the Examiner for this application has changed. Applicant's Amendment to the Claims filed on 7 July 2008 has been received and entered. Claims 2-4, 7, 9-11, 14, 19, 24-30, 33, 38-49 and 51-53 are cancelled. Claims 54-57 are new. Claims 1, 5, 6, 8,12,13,15-18, 20-23, 31, 32, 34-37, 50 and 54-57 are pending and under examination in this action.

Claim Rejections - 35 USC § 103

The rejection of Claims 1, 5-6, 8, 15-18, 20-23, 31-32, 34, 36-37 and 50 under 35 U.S.C. 103(a) as being unpatentable over Fasouliotis et al (of record) in view of Hwang (of record) is withdrawn based on the amendments to the claims. The rejection of cancelled claim 3 is moot.

The rejection of Claims 12-13 under 35 U.S.C. 103(a) as being unpatentable over Fasouliotis et al (of record) in view of Hwang (of record) in view of Ende et al (of record) is withdrawn based on the amendments to the claims.

The rejection of Claims 1, 5-6, 8, 15-18, 20-23, 34- 37 and 50 under 35 U.S.C. 103(a) as being unpatentable over Pykett et al (of record) in view of Fasouliotis et al (of record) and further in view of Hwang (of record) is withdrawn based on the amendments to the claims. The rejection of cancelled claim 3 is moot.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 5-6, 8, 12-13, 15-18, 20-23, 31-32, 34-37, 50 and 54-57 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This is a NEW MATTER rejection. **This rejection is being maintained for reasons of record and below.** The rejection of cancelled claim 3 is moot.

Applicants arguments have been fully considered but are not persuasive.

Currently, independent claims 1, 18, 31, 34 and 50 have been amended to claim a cytotherapeutic unit comprising a plurality of cells "wherein said plurality of potent cells comprises $CD34^-$, $OCT\text{-}4^+$ and $SSEA3^-$ cells that have been isolated from postpartum placental perfusate" wherein the claimed cytotherapeutic unit also comprises at least about one hundred $CD34^+$ cells within the plurality of cells. Newly added dependent claims 54-57 claim the cytotherapeutic unit of the base claims wherein the CD34- cells are also CD10+, CD29+, CD38-, CD44+, CD45-, CD54+, CD90+, SH2+, SH3+, SH4+, SSEA4-, and ABC-p+ and wherein the OCT-4+ cells are also CD10+, CD29+, CD38-, CD44+, CD45-, CD54+, CD90+, SH2+, SH3+, SH4+, SSEA4-, and ABC-p+, and wherein the SSEA3- cells are also CD10+, CD29+, CD38-, CD44+, CD45-, CD54+, CD90+, SH2+, SH3+, SH4+, SSEA4-, and ABC-p+.

The written description requirement for a genus may be satisfied by sufficient description of a representative number of species by actual reduction to practice or by

disclosure of relevant identifying characteristics coupled with a known or disclosed correlation between function and structure, or by a combination of such identifying characteristics, sufficient to show that applicant was in possession of the claimed invention. The instant disclosure does not describe or support the specific combination of a cytotherapeutic unit comprising a plurality of cells wherein the plurality of cells comprises $CD34^-$, $OCT\text{-}4^+$ and $SSEA3^-$ cells, that have been isolated from postpartum placental perfusate, and also comprises at least about one hundred $CD34^+$ cells. The specification discloses broad embodiments of the claimed cytotherapeutic unit. For example page 4, ¶ 2 discloses: "In some embodiments, the cytotherapeutic unit comprises at least some potent cells exhibiting CD34, CD8, CD10, OCT4, CD38, CXCR4, or CD117" and page 4, ¶ 3 states" "In one embodiment of the invention, some or all cells may be characterized by the presence of one or more of the following cell surface markers: CD10+, CD29+, CD34-, CD38-, CD44+, CD45-, CD54+, CD90+, SH2+, SH3+, SH4+, SSEA3-, SSEA4-, OCT-4+, and ABC-p+." However, there are no embodiments disclosed that suggest a composition of at least 100 CD34+ cells in combination with $CD34^-$, $OCT\text{-}4^+$ and $SSEA3^-$ cells that have been isolated from postpartum placental perfusate. On the contrary, the specification suggests some embodiments where all CD34 positive cells will be excluded and suggests other embodiments (e.g. Example 1) describe a unit that contains no less than one percent of $CD34^+$ cells. Example 2 describes a unit that contains no less than one percent of $CD34^+$ cells at a ratio of 2:1 as CD34+/CD33+: $CD34^{+/CD33.}$ Example 3 describes a unit that contains no less than 0.25 percent of $CD34^{+/CD38}$ cells. Further, the disclosure does

not sufficiently describe a specific cytotherapeutic unit in which the $CD34^-$, $OCT\text{-}4^+$ and $SSEA3^-$ cells (and especially the CD34- CD10+ CD29+ CD38- CD44+ CD45- CD54+ CD90+ SH2+ SH3+ SH4+ SSEA4- ABC-p+ cells and the OCT-4+ CD10+ CD29+ CD38- CD44+ CD45- CD54+ CD90+ SH2+ SH3+ SH4+ SSEA4- ABC-p+ cells and the SSEA3- CD10+ CD29+ CD38- CD44+ CD45- CD54+ CD90+ SH2+ SH3+ SH4+ SSEA4- ABC-p+ cells of claims 54-57) that have been isolated from postpartum placental perfusate, in combination with at least about 100 CD34+ cells. The specification does not describe or exemplify the claimed invention so that skilled artisan would be able to envision the specific combination of $CD34^-$, $OCT\text{-}4^+$ and $SSEA3^-$ cells that have been isolated from postpartum placental perfusate and at least about one hundred $CD34^+$ cells, from the instant specification. Therefore the claimed invention as written constitutes new matter.

Applicants response is to traverse the rejection. Applicants submit that Claims 1, 18, 31, 34 and 50, from which the remaining claims ultimately depend, have been amended to specify that the recited cytotherapeutic units comprise cells that are CD34-, OCT-4+ and SSEA3-". In addition, on page 8 of REMARKS, Applicants traverse the standing rejection for an improper incorporation by reference of "essential material" regarding the International Patent application publications WO 02/064755 and WO 02/46373 by arguing that "the application describes cytotherapeutic units comprising $CD34^-OCT^-4^+$ cells, e.g., $CD34^-OCT\text{-}4^+SSEA3^-$ cells, obtained from placental perfusate", without any incorporation by reference.

In addition, Applicants argue that the rejection in the previous office action provides no basis for the contention that "[t]he skilled artisan would not envision a population of potent cells specifically isolated from postpartum placental perfusate that are CD34-OCT-4+ cells from the instant disclosure that provides a list of possible antigenic markers" and that the rejection does not establish that the subject matter of the amended claims is new matter. Furthermore, Applicant submits "all aspects of the claimed cytotherapeutic units are described, explicitly, in the specification as detailed below". Additionally, Applicant argues that "the specification teaches that a cytotherapeutic unit can comprise more than one type of potent cell at least at paragraphs [0040] and [0043], and Example 2 of the published application" and that "the specification teaches cytotherapeutic units that comprise CD34+ cells at least at paragraph [0040] of the published application, Example 1, Example 2, and Example 3". Moreover, Applicant argues that "it is apparent that the application teaches cytotherapeutic units comprising more than one type of cell, where at least one type is a CD34+ cell, at paragraphs [0040] and Example 2". In addition, Applicant argues the specification teaches that cytotherapeutic units can comprise CD34-, OCT-4+ cells, and cells that are CD34-, OCT-4+ and SSEA3-, as well as cells that "may be characterized by the presence of one or more of the following cell surface markers: CD 10+, CD29+, CD34-, CD38-, CD44+, CD45-, CD54+, CD90+, SH2+, SH3+, SH4+, SSEA3-, SSEA4-, OCT-4+, and ABC-p+", citing the published application at least at paragraphs [0012] and [0022]. Applicants argue that the cells described by the language "one or more of," in this instance, include cells that are CD34- OCT-4+. Thus, the Applicant argues that

> the specification explicitly teaches cytotherapeutic units comprising cells that are CD34- and OCT-4+. In the same manner, the specification explicitly describes cells that are CD34-, OCT-4+ and SSEA3-. Clearly, the specification teaches cells having each of these markers. Moreover, the language "one or more of' includes "all." In other words, in one embodiment, the specification teaches that cytotherapeutic units can comprise cells that are each of CD 10+, CD29+, CD34-, CD38-, CD44+, CD45-, CD54+, CD90+, SH2+, SH3+, SH4+, SSEA3-, SSEA4-, OCT-4+, and ABC-p+. However, such cells need not be identified by all of these markers. Such cells can be identified as CD34- and OCT-4+, or CD34-, OCT-4+ and SSEA3-, and still be the same cell. For example, CD34+ cells display many other markers besides CD34, yet are referred to as CD34+ cells.

In addition, Applicant argues that "the specification teaches that cytotherapeutic units can comprise cells from placental perfusate at least at paragraph [0013], which states that cells from perfusate are preferred, and paragraph [0043], and originally-filed claims 9 and 43" and moreover, argue "the application teaches at least at paragraph [0043] that cytotherapeutic units can comprise more than one type of cell, at least one of which is obtained from placental perfusate". Thus, Applicant argues "the specification clearly teaches cytotherapeutic units comprising CD34+ cells and CD34- OCT-4+ cells, e.g., CD34- OCT-4+ SSEA3- cells, wherein the latter cells are obtained from placental perfusate" and as such, Applicant submits that "the claimed invention is clearly described in the specification, and the claims comprise no new matter". Furthermore, Applicant traverses the contention in the previous office action that the paragraphs provided by the Applicants are broad disclosures of a cytotherapeutic unit comprising at least some potent cells exhibiting CD34, CD8, CD 10, OCT4, CD38, CXCR4, or CD117, because Applicant argues that "it focuses only on the teaching of paragraph [0011] of the specification", citing "Examination requires a review of the whole application to

determine how Applicant provides support for the claimed invention. See Manual of Patent Examining Procedure, Eighth Edition Incorporating Revision No. 5 ("M.P.E.P.") § 2163(II)(A)(2), pages 2100-177 to 2100-178. Specifically, Applicant argues:

> The rejection contends that the specification does not disclose the exact embodiment of a cytotherapeutic unit comprising CD34+ cells "and the specific combination of CD34- OCT-4+ cells isolated from postpartum placenta perfusate." Office Action at page 5. The specification is not required to disclose every embodiment of an invention in *haec verba* in order to satisfy the written description requirement. See M.P.E.P. § 2163.03 at page 2100-175, left column. Nor is the specification required to exemplify the recited embodiment. "As explained by the Federal Circuit, '(1) examples are not necessary to support the adequacy of a written description; (2) the written description standard may be met.., even where actual reduction to practice of an invention is absent...'" M.P.E.P. at § 2163, page 2100-179, citing *Falkner v. Inglis*, 448 F.3d 1357, 1366 (Fed. Cir. 2006); see also *LizardTech. Inc. v. Earth Resource Mapping, PTY. Inc.*, 424 F.3d 1336, 1345 (Fed. Cir. 2005) (no examples necessary for written description); *Capon v. Eshhar*, 418 F.3d 1349, 1358 (Fed. Cir. 2005) ("The Board erred in holding that the specifications do not meet the written description requirement because they do not reiterate the structure or formula or chemical name for the nucleotide sequences of the claimed chimeric genes," wherein the genes were novel combinations of known DNA segments.). As explained by the Supreme Court in a different context, "[a] person of ordinary skill is also a person of ordinary creativity, not an automaton." *KSR International Co. v. Teleflex Inc.* 127 S. Ct. 1727, 1741 (2007).

That is, a person of skill in the art, reading the present specification, would readily be able to tie together the disclosures as stated above to appreciate that Applicant had, in fact, invented the claimed cytotherapeutic unit.

Applicants arguments have been fully considered but are not persuasive for reason of record and presented herein. Applicants have currently amended the base claims from which all additional claims depend to now claim a cytotherapeutic unit suitable for treatment of a patient in need of hematopoietic

cells comprising at least about one hundred CD34+ cells within a plurality of potent cells, the unit comprising cells from a plurality of sources, wherein said plurality of potent cells comprises $CD34^-$, $OCT\text{-}4^+$ and $SSEA3^-$ cells that have been isolated from postpartum placenta perfusate.

The specification does not describe or exemplify the claimed invention so that a skilled artisan would be able to envision the specific combination of $CD34^-$, $OCT\text{-}4^+$ and $SSEA3^-$ cells that have been isolated from postpartum placenta perfusate and at least about one hundred CD34+ cells from the instant specification.

Specifically, regarding the rejection for improper incorporation by reference of International Patent application publications WO 02/064755 and WO 02/46373, Applicants argument is not commensurate with the scope of the claims. For example, Applicants argue that "the application describes cytotherapeutic units comprising $CD34^-$ OCT^-4^+ cells, e.g., $CD34^-$ $OCT\text{-}4^+SSEA3^-$ cells, obtained from placental perfusate" but the claims are drawn to the specific combination of $CD34^-$, $OCT\text{-}4^+$ and $SSEA3^-$ cells that have been isolated from postpartum placenta perfusate and at least about one hundred CD34+ cells.

In addition, regarding Applicants argument that the "contention that the disclosure does not sufficiently describe a cytotherapeutic unit comprising a plurality of cells that are CD34- and cells that are CD34- and OCT-4+", this argument is not commensurate with the scope of the rejection of the claim as a whole. For example, Applicants arguments that individual components of the base claims are described in the instant specification do not address the rejection for new matter which is directed not at individual pieces of a potential claim embodiment but at the claimed invention as a whole. Applicants present no arguments showing support for the base claims, as a whole, so that a skilled artisan would be able to envision the specific combination of $CD34^-$, $OCT\text{-}4^+$ and $SSEA3^-$ cells that have been isolated from postpartum placenta perfusate, and at least about one hundred CD34+ cells. On the contrary, the specification suggests that in some embodiments of cytotherapeutic units all CD34 positive cells will be excluded and suggests other embodiments of cytotherapeutic units that contain no less than one percent of $CD34^+$ cells.

Therefore, Claims 1, 5-6, 8, 12-13, 15-18, 20-23, 31-32, 34-37 and 50 stand rejected and new claims 54-57 are newly rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement as a NEW MATTER rejection. The rejection of cancelled claim 3 is moot.

Conclusion

No claims are allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CATHERINE S. HIBBERT whose telephone number is (571)270-3053. The examiner can normally be reached on M-F 8AM-5PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Low can be reached on 571-272-0951. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/NANCY VOGEL/
Primary Examiner, Art Unit 1636
Respectfully submitted,

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Examiner/AU1636